

Letter of Col. C. S. RICHE, Corps of Engineers,
to the Chairman of the Sub Committee
on the Haupt Breakwater.

WASHINGTON, D. C., December 10, 1900.

Hon. De Alva Alexander,
Member River and Harbor Committee,
House of Representatives.

DEAR SIR:

In response to the questions about Aransas Pass, Texas, asked me by you the other day, it gives me much pleasure to reply as follows:

FIRST QUESTION.

“ Will the completion of the curved breakwater as designed prevent the building of a second jetty or of securing the channel by dredging in case the single breakwater does not produce the results expected? ”

ANSWER.

A categorical answer can hardly be given without danger of misunderstanding. The curved breakwater coincides with the North jetty, as proposed by the Board of Engineers, for all but its outer 1,000 feet. Here the plans diverge as shown on several of the recent maps of Aransas Pass. Where the two plans overlap there can be no interference with the building of a second jetty or with dredging.

For the outer 1,000 feet there is a difference. If this outer 1,000 feet were built on the line proposed by Professor Haupt, a second jetty, if built, would have to be put on a somewhat different line from that proposed by the Board of Engineers, in order not unduly to contract the distance between the two jetties at their outer ends. If the worst came to the worst the outer 1,000 feet of the Haupt plan, if constructed, could be removed and the jetty extended as proposed by the Board instead. This (construction

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and subsequent removal of outer 1,000 feet) would, in my judgment, cost less than the construction of the second jetty.

I am not clear, however, that this outer 1,000 feet if constructed by the Haupt plan would have to be removed, even if the results expected by the inventor of the curved breakwater should not be obtained. It *might* have to be done, but I am inclined to think not. While I prefer the location of the jetties as proposed by the Board, I incline to the opinion that the construction of the outer 1,000 feet of the Haupt plan will not interfere with the subsequent construction of a second jetty, or with dredging, all in such manner as to secure all the essential results that we know will follow from two jetties. While it *might* interfere, and while it *might* have to be removed, such interference and the necessity for such removal, impress me as unlikely. If the removal became necessary, however, the cost of constructing and removing this outer 1,000 feet would, in my judgment, be less than the cost of a second jetty as already explained, and would represent the extreme cost of the experiment to the Government. If the removal of this outer 1,000 feet should not subsequently prove necessary, then the cost of the experiment to the Government would have become nil.

SECOND QUESTION.

“Will it not cost much less to complete this structure (the Haupt jetty) to its full length than to build two jetties and dredge a channel?”

ANSWER.

Yes.

THIRD QUESTION.

“If this plan should succeed, however, would it not save large sums to the Government in future works, where it may be applicable?”

ANSWER.

Yes.

FOURTH QUESTION.

“ How would it affect the cost of the work if the contract for its completion were made at once rather than in detachments? ”

ANSWER.

The single contract system would be particularly advantageous at Aransas Pass. The locality is exposed and remote. Terminal facilities and expensive plant would have to be provided by the contractors. Quarries would have to be opened and developed. All this would be required equally for a small contract as for a large one. This preparation would be paid for by the Government in the contract prices for the work. A small contract would mean, therefore, much larger prices per ton of rock than a large contract. Furthermore, once the Government paid these preliminary expenses in a small contract, prices in a second small contract would not be materially reduced. The contractor already on the ground would know that no one could compete with him for the second contract without having to figure on all this preliminary expense and would bid high accordingly.

Roughly speaking in a given piece of work of this character the Government would pay for these preliminary expenses as many times over as there were contracts. With three contracts it would pay three times. With one contract but once.

In addition, competition increases, up to a certain point, with the size of the work. A work could, of course, be so large that only those having considerable capital could swing it, then competition would diminish and prices would rise—but at Aransas Pass the conditions are such that, in my judgment—one contract would result in maximum economy and advantage to the United States.

CONCLUSION.

In the above I do not wish to be considered as endorsing Professor Haupt's plan.

I believe the two jetty systems to be better for the practical reasons stated by Col. Robert before the committee the other day.

Also we *know* that two jetties will give the results, and that these results will not be obliterated even by such great storms as that recently experienced at Galveston, where there has been no delay to vessels resulting from insufficient water.

Also, it appeals to me as sensible to follow the indications of nature as far as possible. In the throat of the Pass we find a satisfactory channel walled in by the islands on each side of it. In order to prolong this channel into deep water of the Gulf, it would seem to me advisable to prolong these walls into the Gulf, which would thus mean two jetties and not one.

However, the experiment of one jetty can be made without much risk of loss, should the committee desire. I am wedded to neither plan, having originated neither.

ESTIMATES OF COST.

Completion of curved breakwater as proposed by
Professor Haupt, including contingencies - \$700,000

Completion as proposed by Board, with exception of
sill, about the same.

Completion of that portion of curved breakwater
common to both plans (omitting outer 1,000
feet - - - - - \$500,000

Estimates for other work proposed by Board can be found in Board's report printed in House Document No. 119, Fifty-fifth Congress, third session.

Estimates are based upon the supposition that the continuing contract system will apply. Otherwise the work at this out of the way point will cost from 20 to 25 per cent. more.

I have made this answer long, but have tried to cover all the points. I trust it will give you the desired information.

With sincere regard, believe me,

Very respectfully yours,

(Signed)

C. S. RICHE,
Captain Corps of Engineers.